DOCUMENT RESUME

ED 153 424 EC 110 373

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TITLE Verbal Expressive Language in the 0-30 IQ Student Who Is Blind.
PUB DATE May 78
NOTE 25p.; Paper presented at the Annual International Convention, The Council for Exceptional Children (56th, Kansas City, Missouri, May 2-5, 1978, Session Th 12)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS Adolescents; Adults; *Behavior Change; Blind; Custodial Mentally Handicapped; Exceptional Child Research; *Intervention; Mentally Handicapped; *Multiply Handicapped; Reinforcement; Trainable Mentally Handicapped; *Verbal Development

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Thirty-eight institutionalized severely and profoundly retarded blind students (11 to 26 years old) were given a 100-session taped treatment program to increase vocal utterances both qualitatively and quantitatively. Ss made significant gains in quantity of utterances as reflected in a median test. (A categorization schema for quality of preverbal utterances is presented.) Tactual reinforcement was found to be highly effective for this population. Classroom staff increased their sensitivity and powers of observation with respect to students' vocal expression and realized that they could be effective in promoting expressive vocal language. (Author/SBH)

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VERBAL EXPRESSIVE LANGUAGE IN THE 0-30 IQ STUDENT WHO IS BLIND

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by

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A Research Paper to be
Presented at the 56th Annual CEC Convention

Kansas City, Missouri
May 4, 1978

EC110373

ABSTRACT

Institutionalized severely and profoundly retarded blind students were given a hundred-session taped treatment program to increase vocal utterances both qualitatively and quantitively. These institutionalized students, ranging in age from eleven to twenty-six, made significant gains in quantity of utterances as reflected in a median test. A categorization schema for quality of preverbal utterances is presented.

Tactual reinforcement was found highly effective for this population. Classroom staff increased their sensitivity and powers of observation with respect to students' vocal expression and realized that they could be effective in promoting expressive vocal language.

BACKGROUND

The Annex Program of the Northville Public Schools addresses the needs of institutionalized blind and deaf-blind students, most of whom test in the 0-30 I.Q. range. Many similar programs are currently embracing a total communications approach to the severely and profoundly retarded population. It was not altogether accepted that total communication was the proper approach with blind students in this I.Q. range. Institution records were of little use because they included no linguistic history. Since institutionalization depresses language competencies, the researcher felt a need to explore the potential for vocal expressive language before turning to the total communication approach. This action research study was designed to increase the quantity and quality of vocal utterances of blind, 0-30 I.Q. students. Secondary goals were to sensitize staff to rudimentary vocalizations, to make the classroom teacher the primary agent for expressive language training, and to categorize students in terms of their apparent vocalizing ability and build upon it.

At the beginning of the study, the Program had no speech therapist; thus it was unrealistic to assign expressive language training to this nonexistent person.

A speech therapist was subsequently hired, but the 1:66 staff/student ratio, although better than the common 1:100, prevented the therapist from dealing one-to-one with each student on a consistent and frequent basis. Her expertise was utilized in a more efficient manner by having her assist in the design of the taped treatment programs carried out by the classroom staff. The speech therapist also dealt with those students not included in the research design; that is, echolalics, the hearing impaired, and those testing above 30 I.Q.

Although the Michigan Mandatory Special Education Act (P.A. 198) was passed in 1971, it was enforced in behalf of institutionalized children and adults to age twenty-six only in 1975. Thus teachers in this field have little experience with institutionalized children or with those in the 0-30 I.Q. range. Teacher training programs have only recently begun to address this problem. Therefore, a second major thrust of this study is to sensitize staff to their responsibility for expressive language training.

When the study was conceived, the following conditions existed in the Annex Program:

1. Teachers were actively engaged in extending receptive language skills with students but did not perceive themselves as the major agent for teaching expressive language.

2. The Annex staff had no historical data as to previous linguistic behavior of the students. Institutional records were limited and did not deal with verbal behavior.

3. Staff sensitivity to students' utterances was low. This was proven by the contrast between an initial staff questionnaire regarding their students' verbal behaviors and the base line data collected for the study by the same staff members.

4. Positive reinforcers, other than edibles, were few in number because students did not handle play objects appropriately. An emphasis of the study was the development of effective social reinforcers.

5. Resistive, non-compliant, and non-attending were terms which could be applied to almost all of the students selected for the study.

DESIGN

The research was designed to meet the following objectives:

1. To reinforce and increase oral utterances and, in a sense, give students permission and encouragement to make his/her needs known vocally.

2. To sensitize the classroom staff to the utterances of their students both quantitively and qualitatively.

3. To shape in an easily administered positive reinforcer which was not edible and would be useful to staff and of social benefit to the student.

4. To involve gross motor activity and varied stimulation as a part of expressive verbal training. This was accomplished by having the students move to a Verbal Language Laboratory (VLL) away from their regular classroom and to go through a familiar routine involving a change of surroundings and purposeful movement.

5. To involve all blind students with 0-30 I.Q. who were not deaf or echolalic. It was felt that the treatment process would be detrimental to echolalics.

BASELINE DATA

Each student was pre-tested for a two-hour period in his own classroom. Every utterance made between 9:30 a.m. and 11:30 a.m. on one of three consecutive days was noted in writing. A ratio of one teacher and two aides to nine students allowed all the baseline data to be collected within a three-day period.

CATEGORIZATION SCHEMA

It became apparent that the severely and profoundly retarded were not one homogeneous group. Their language ability varied widely. Further, the literature suggested no relevant categorization schema. It became the job of this study to devise one.

The following categories and criteria were devised and found useful for adult non-verbal students in the 0-30 I.Q. range:

M - totally mute, no vocalization during baseline

M_v - mute, except for the vocalization vowels

M_b - mute, except for vowel vocalization and two consonants (which could be due to pure chance)

B - babbler, vocalizing vowels and more than two consonants

T - talker, has at least one word which can be recognized by the tester whether or not it appeared in context

GROUPING

All students were being taught by a tactual approach in the classroom and were either totally blind or had no vision beyond light perception. Those students who were deaf or possibly deaf were excluded, since the treatment was based on the auditory sense to a large degree. Echolalic students were excluded because the training procedure was possibly detrimental to them.

Out of sixty-four severely and profoundly retarded students, there were sixteen deaf or possibly deaf and ten echolalics. They were programmed by the speech therapist and were not a part of this study. The remaining thirty-eight students were placed in four groups to receive treatment. Every effort was made to account for all possible variables other than the treatment. With the exception of the second experimental group, who were visually identifiable at one point, staff members had no idea which individuals were in any group. Groupings were as follows:

A - program of five minutes of taped music - ten students

B - program of one minute of music, three minutes of male voice eliciting imitation of sounds and words (see Appendix A), one minute of music - ten students

C - same as B, but Raggedy Ann doll is given to subject when the imitation of word "baby" is asked for on the tape - ten students

D - Distractor Group - program same as B, but data will not be utilized for the study - eight students

The A, B, and C groups all had the same cross-section of expressive language abilities:

	M	M_v	M_b	B	T
A	2	3	2	2	1
B	2	3	2	2	1
C	2	3	2	2	1

Other variables were accounted for by mixing students from different classrooms to avoid contamination of data by a difference in teaching styles or by classroom ability grouping based on receptive language abilities. Membership in the various groups was as follows:

Students from:	Group Placement		
	A	B	C
Rm. 14	2	2	0
Rm. 15	2	2	1
Rm. 20	1	2	2
Rm. 21	2	3	2
Rm. 23	2	0	3
Rm. 24	1	1	1

Treatment groups had the following makeup:

	A	B	C
Males	6	6	6
Females	4	4	4
Mean birth year:	1957.2	1957.0	1956.4

EQUIPMENT AND PERSONNEL

An aide was hired to keep records in order, maintain the tapes, and prepare the Vocal Languages Laboratory for each group's arrival daily. This was the only additional staff involved. Treatment was administered by the regular staff.

Ten tape recorders with earphones, ten desks and chairs, thirty-eight blank tapes, and ten tapes of "hustle" music (used for shaping earphone use) were obtained.

PROCEDURE

The month of January 1977 was devoted to shaping all subjects toward the toleration of earphones. Music was played while the shaping took place, and all Annex Program staff assisted in this difficult task. Students whose primary learning modality is auditory found it upsetting to have this avenue impeded by earphones. Reinforcers ranged from edibles through back-rubbing to allowing the student to pull a staff member's hair if he/she would only tolerate the earphones for the five-minute period. As soon as the criteria was met, the student was started on either the A tape, B tape, or C tape in the room set aside as the Verbal Language Laboratory (see Appendix B for floor plan). Every day, each class would come to the VLL as per the schedule, and students would be seated in the same seat daily. The VLL aide had already put each student's individualized tape (see Appendix A tape scripts) in the tape recorder concealed in the student desk at which the subject was seated. The following rules were adhered to in the VLL: (see Appendix C for posted rules)

1. No edibles were allowed in the room.
2. The same staff member dealt with each student daily.
3. All reinforcements were tactual, on the upper

back and neck area (arms were deemed not neutral because blind retardates tend to be jerked about by them in the institution.

4. Reinforcement was given as instantaneously as possible to the utterance. Recording was secondary in importance.

5. When one hundred sessions were reached, classroom staff collected baseline data from 9:30 a.m. to 11:30 a.m. in the classroom in the same way that the beginning baseline data had been collected.

6. Data was charted daily by the VLL aide. Tapes were maintained by him also.

During the course of the research, two subjects were hospitalized for long periods of time. It was decided that they should be dropped from the research, as their absence from ongoing sessions was significant and their experience would be different from those continuing on a somewhat consistent basis with the one hundred sessions. Both these subjects were categorized as "T" talkers. It was decided to eliminate the data of the third "T" talker and examine the data for only nine subjects in each group.

RESULTS

Students at all levels increased noticeably in number of utterances from pretest to posttest. The pretest median was thirty-four utterances during the two-hour period. This contrasts with a median of seventy-two utterances on the posttest and reflects

almost a doubling of the median score. A summary follows of the posttest data from which the median test was derived.

SUMMARY OF POSTTEST DATA

	Low Pretest	Middle Pretest	High Pretest	Total
Number of students above the Median Post	3	3	8	14
Number of students below or equal to the Median Post	7	6	0	13
Total	10	9	8	27

MEDIAN TEST

T is 10.5732, which is significant at .95 with two degrees of freedom.

Beyond that, more specific differences emerged. The score profiles for the three treatment groups did not differ significantly. This suggests that the content of the tape was secondary in importance to something else. Most important was the fact that every student received tactual reinforcement for every utterance made and that this reinforcement is reflected in the dramatically higher posttest median.

The researcher divided the students into three

categories to determine whether the amount of initial vocalization influenced the efficacy of the treatment. Because the posttest median was seventy-two utterances, the high utterance group was defined as those who achieved seventy-eight or more utterances on the pretest. The low group contained those who made from zero to twenty-four utterances, while the middle group reflected from twenty-five to seventy-seven utterances.

Important differences became apparent. Those who began in the high group surged forward significantly in amount of utterances made. Pretest average for this group was one hundred and thirty-four utterances, if one excludes two outliners, while posttest average was two hundred and twenty-three utterances with the same two exclusions. The medium and low groups, while they increased in numbers of utterances, did not do so nearly as dramatically. On the other hand, the low group made significant gains qualitatively. There was much more upward movement in the hierarchy of categories delineated in the categorization schema.

Thus two different results are found. Students beginning above the median post score made large quantitative increases, while those on the very bottom made dramatic qualitative advances. For example, one

boy who began the study as a mute (M) ended it categorized as a talker (T) and subsequently was placed in speech therapy.

IMPLICATIONS

1. Before going to manual communication with institutionalized blind students, it is worthwhile to attempt to stimulate vocal language unless comprehensive and accurate linguistic histories suggest otherwise.

2. It appears that two different and statistically unrelated results occur depending upon the beginning level of vocalization of the individual student. Numbers of utterances do not correlate with qualitative differences.

3. Five minutes a day devoted to a program which reinforces utterances for this level student did raise qualitative and quantitative levels of utterances. This procedure should be included in the curriculum of the 0-30 I.Q. student who is blind.

4. Tactual reinforcement was highly effective and reflects a tactual deprivation in the institution. Tactual reinforcement should be more extensively utilized with institutionalized students. Use of edible reinforcements has decreased in the Program.

5. Music, spoken tapes, and earphones provide

valuable set of tools for reinforcing students. Listening stations have been set up in each classroom.

6. The process of shaping students in the Verbal Language Laboratory made teachers more sensitive to both quality and quantity of students' utterances and was a valuable teacher training tool.

7. Gains in vocalization create a need for more speech therapists.

8. Both classroom teachers and speech therapists can help each other deal more effectively with students by modifying their traditional roles. There are many things in speech therapy which can be delivered by the classroom staff when designed by the speech therapist.

9. Staff behaviors in the Verbal Language Laboratory generalized to the classroom and resulted in much more reinforcement throughout the school day.

10. The categorization schema outlined in this study facilitates communication between the speech therapist and the classroom staff. It is easily understood and used by both.

11. This study should be replicated with other groups of institutionalized students. Similar results would suggest untapped linguistic potential in institutionalized populations.

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APPENDIX A

VERBAL LANGUAGE LABORATORY

INDIVIDUALIZED TAPE 1

Music: one minute.

"Hello, John. Good sitting, John. John, say 'oo'_____ 'oo'_____. Good, John! Now, John, say 'ee'_____'ee' _____. Now say 'boobee'_____'boobee'_____. Good, John. Okay, John, say 'ay'_____'ay'_____. Good, John. Now, John, say 'ee'_____'ee'_____. Okay, now, John, say 'baybee'_____'baybee'_____. John, good sitting. John is a good listener. I have to finish our lesson for today. John, can you say 'bye bye'? _____. Bye bye, John. John, say 'bye bye' _____. Bye bye, John. We'll be talking again tomorrow."

Music: one minute.

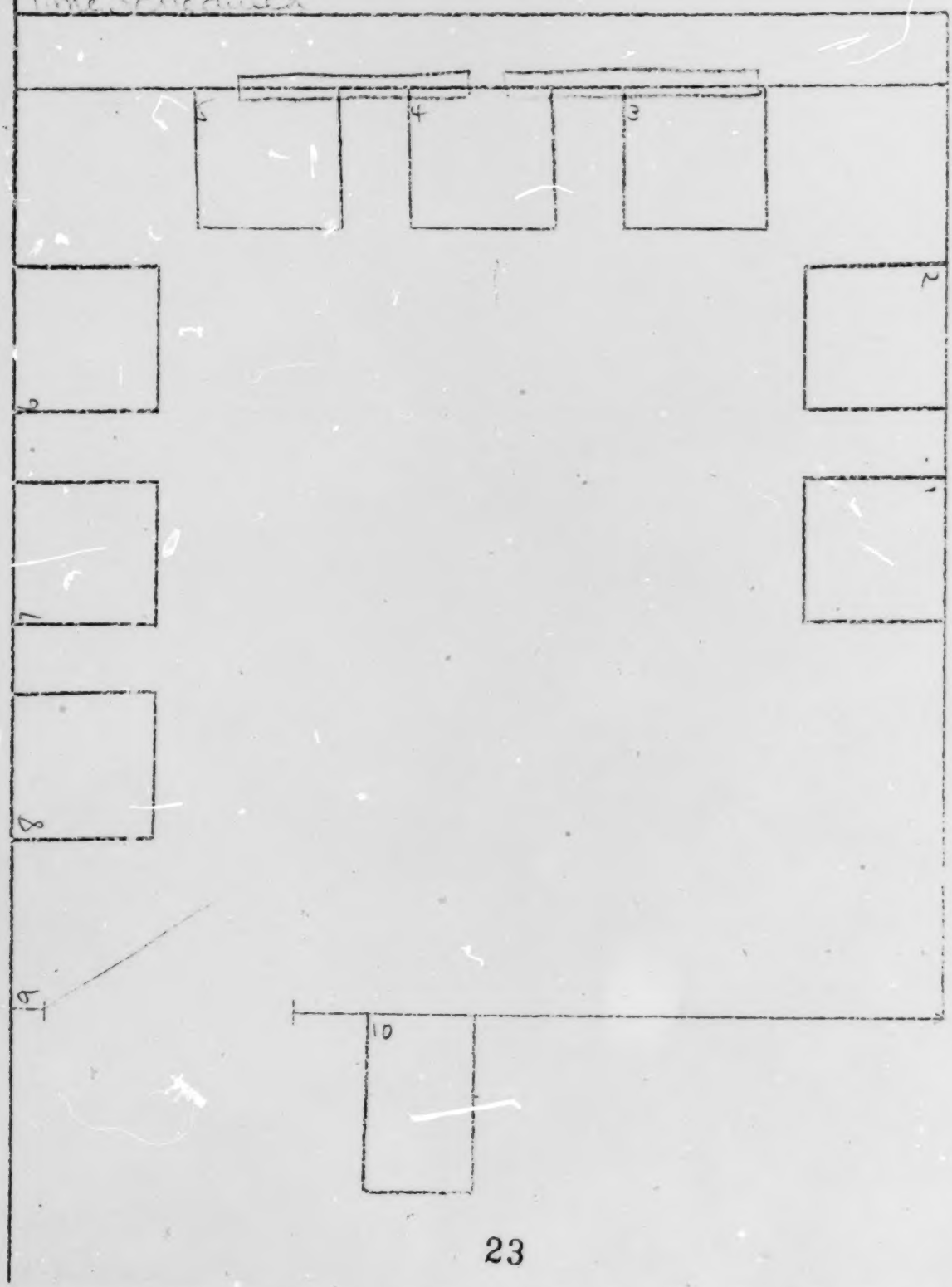
APPENDIX B

VLL Seating Chart 20

Teacher

Homeroom

Time Scheduled



APPENDIX C

VLL Room

Research Procedure

1. Child is seated in assigned station.
2. Tape recorder is "on" (music) playing.
3. Earphones are adjusted.
4. Data taking begins - each student data sheet is handled by by adult reinforcer.
5. All utterances are recorded according to the following:

Vocal Utterance	√
Laugh	*
Scream	0

Only vocal utterances (√) should be reinforced.

6. Reinforcement consists of:

Only rubbing of back
neck
face

7. Reinforcement should be almost simultaneous with the vocal utterance - therefore the behavior is 1. utterance 2. reinforcement 3. recording data
8. Any student responding with 10 or more utterances during any one session should be reported to Tom at end of the session.